Remarks

Claims 1-30 are pending in the subject application.

I. Response to Rejection of Claims under 35 USC §102.

Claim 1

Claim 1 is directed to an absorbent article (e.g., disposable diapers, child's training pants, feminine care articles, incontinence articles, bandages) including a scrim reinforced absorbent core for absorbing body fluids. The absorbent core has a reduced stiffness relative to conventional scrim reinforced absorbent cores, thereby providing a better and more comfortable fit.

Specifically, claim 1 is directed to an absorbent article for absorbing body fluids comprising an absorbent core constructed and arranged for receiving and holding such fluids and including a reinforcing scrim member intimately associated with the absorbent core to maintain its structural integrity in use. The scrim member comprises a network of machine direction (MD) strands extending in a machine direction, and cross direction (CD) strands extending in a cross direction. At least some of the MD strands and CD strands cross over each other and are interconnected. The MD strands are selected and formed to provide a predetermined stiffness and strength in supporting the absorbent core in the machine direction. The CD strands are selected and formed with at least one characteristic difference from the MD strands to provide a reduced stiffness of the absorbent core in the cross direction.

Thus, the scrim strands that extend in the cross-direction (CD) of the absorbent core are formed with at least one characteristic difference from the scrim strands that extend in the machine-directon (MD) of the absorbent core so that the absorbent core as a whole has a reduced stiffness in the cross-direction (CD) of the absorbent core.

Claim 1 is submitted to be unanticipated by and patentable over the references of record, and in particular U.S. Patent Nos. 6,204,207 (Cederblad et al.), 4,235,237 (Mesek et al.), 5,334,446 (Quantrille et al.), 6,802,834 (Melius et al.) and AU Patent No. 458,424 (Brooks et al.) in that whether considered alone or in combination the references fail to show or suggest an absorbent article having an absorbent core constructed and arranged for receiving and holding body fluids and including a reinforcing scrim member with machine direction MD strands having a predetermined stiffness and cross direction CD strands selected and formed with at least one characteristic difference from the machine direction MD strands to provide a reduced stiffness of the absorbent core in the cross direction.

Before addressing each of the cited references, applicants note that the Office action does not set forth how any one of the references discloses each and every element of claim 1. "To be anticipating, a prior art reference must disclose 'each and every limitation of the claimed invention, must be enabling, and must describe the claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention.'" *Helifix, Ltd. v. Blok-Lok, Ltd.*, 208 F.3d 1339, 1346 (Fed. Cir. 2000), citing *In re Paulson*, 30 F.3d 1475,

1478-79 (Fed. Cir. 1994). In particular, nowhere does the Office assert that any one of the cited references explicitly discloses a reinforcing scrim for an absorbent core having machine direction stands with a predetermined stiffness and cross direction stands with a stiffness less than the stiffness of the machine direction strands to produce the absorbent core with a reduced stiffness in the cross direction as recited in claim 1. It is assumed, then, that each of the Office's §102 rections is grounded in inherency. In the event the Office maintains its rejection of claim 1 in view of Cederblad et al., Mesek et al., Quantrille et al., Melius et al., and/or Brooks et al., applicants respectfully request that the Office clearly point out the features disclosed in these references that the Office believes corresponds to each and every recited feature, or expressly state its basis for an inherency rejection.

Cederblad et al.

With reference to Fig. 1 of Cederblad et al., as cited in the Office action, Cederblad et al. disclose a bicomponent netting 10 comprised of elastic strands 12 extending in a machine direction (MD) and non-elastic, adhesive strands 14, 16 extending in a transverse direction (TD). In the embodiment of Fig. 3, extruded plastic strands 38 extend in the transverse direction while low melting point (adhesive) strands 40 extend in the machine direction of the netting 36.

Cederblad et al. further disclose that the bicomponent netting may be used to form a laminate with a non-woven fabric. In particular, as shown in Figs. 3 and 4, the bicomponent

netting 36 is first laid over fabric 34. The fabric and netting are then subjected to pressure and/or heat such that the adhesive strands 40 of the netting melt into the fabric, and are no longer a continuous structure (Fig. 4). See, e.g., column 4, lines 60-67 ("upon melting of the LMP strands, the network no longer exists leaving substantially a series of parallel HMP strands remaining"); and column 2, line 64 - column 3, line 4 ("By melting and bonding the non-elastic adhesive strands into a fabric substrate, . . ., the non-elastic strand is flattened out, embedded into the substrate, and is no longer a continuous structure, as the strands is partially disintegrated"); and column 13, lines 23-25 ("[t]his invention virtually eliminates the MD strands by substantially melting them into the fabric").

Cedeblad et al. thus fail to disclose or suggest an absorbent article having an absorbent core including a scrim member comprising a network of machine direction (MD) strands extending in a machine direction, and cross direction (CD) strands extending in a cross direction. While the netting of Cedeblad et al. has both MD and CD strands, once it is laminated with a fabric the MD strands are disintegrated and melted into the fabric. Thus, the laminate (characterized in the Office action as an the absorbent core of claim 1) has only CD strands and does not have a network of MD and CD strands.

For these reasons, claim 1 is submitted to be unanticipated by and patentable over Cederblad et al.

Mesek et al.

Mesek et al. disclose an open network 11 comprising a plurality of fibers 13 crossing one another to define intersections 15, and water-swellable particles 17 integrated with the fibers 13. The network 11 is adapted for use in an absorbent article to maintain the water-swellable particles in a predetermined arrangement. For example, Figs. 4 and 5 show a diaper 30 having a moisture-permeable facing sheet 31, a moisture-impervious backing sheet 33, an absorbent pad 35 positioned between the backing sheet 33 and the facing sheet 31, and an open network 37 situated between the facing sheet 31 and the absorbent pad means 35.

In Example IV, relied upon by the Office, Mesek et al. disclose an open network comprising a cotton scrim having 21 warp threads of 30/1 cotton count yarn and 11 filling threads of 38/1 cotton count yarn and a polyacrylonitrile starch graft copolymer hydrocolloid. Warp refers to the yarns running lengthwise in the scrim, and the filling refers to the yarns at right angles to the warp yarn. The cotton count refers generally to the fineness of the yarn threads.

Mesek et al. fail to explicitly disclose an absorbent article having an absorbent core including a reinforcing scrim member comprising a network of machine direction (MD) strands extending in a machine direction and cross direction (CD strands extending in a cross-direction. Applicants reiterate that the MD and CD recited in claim 1 is that of the absorbent core with which the reinforcing scrim member is associated. There is no disclosure found anywhere in Mesek et al. as to the orientation

of the network described in Example IV of Mesek et al. on the absorbent pad 35. Specifically, there is no disclosure by Mesek et al. that the warp threads of the Example IV network extend in the machine direction of the absorbent pad 35 while the filling threads extend in the cross direction of the absorbent pad as recited in claim 1.

Moreover, Mesek et al. further fail to disclose that the different cotton counts of the warp threads and filling threads result in different stiffness properties between the warp direction and the filling direction.

It appears, instead, that the Office's rejection is grounded in inherency. To establish inherency, the prior art "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999); MPEP §2112.

Specifically, as best understood, the Office action appears to take the position that because the cotton scrim of Mesek et al. has warp and filling threads with different cotton counts and different spacing then 1) the warp threads and filling threads inherently extend in the machine direction and cross direction, respectively, of the absorbent pad and 2) the scrim inherently has different stiffness in the lengthwise and transverse directions.

However, as discussed above, Mesek et al. do not disclose

the orientation of the warp threads and filling threads relative to the machine direction and cross direction of the absorbent pad. The Office's characterization is but one possible orientation of the cotton scrim. That is, it is equally possible that the scrim is oriented on the absorbent pad with the warp threads extending in the cross direction of the absorbent pad and the filling threads extending in the machine direction of the absorbent pad. Thus, irrespective of whether the different cotton counts of the warp threads and filling threads result in different stiffnesses (and applicants do not concede such a difference), it is not a necessary result, and therefore not inherent, that the absorbent pad absorbent pad of Mesek et al. has associated therewith a scrim comprised of a network of machine direction strands and cross direction strands having at least one characteristic difference such that the cross direction of the absorbent pad has a reduced stiffness relative to the machine direction of the absorbent pad.

For these reasons, claim 1 is submitted to be unanticipated by and patentable over Mesek et al.

Quantrille et al.

As shown in Figs. 3 and 4 of Quantrille et al., the reference discloses an elastic nonwoven fabric comprising a three layered structure 28 including carded web layers 12, 26 and an elastic net 20 positioned between the web layers. During the manufacturing of the fabric, the web layers 12, 26 and net 20 are thermally treated to bind the structure 28 into a coherent, unitary structure. Column 5, lines 19-25 and column

6, lines 61-65.

Quantrille et al. fail to disclose an absorbent article having an absorbent core constructed and arranged for receiving and holding fluids and including a reinforcing scrim member intimately associated with the absorbent core. The Office action, at page 7, paragraph 23, relies on the disclosure by Quantrille et al. that elastic fabrics are desirable for use in bandaging materials, garments, diapers, supporting clothing and personal hygiene products. Column 1, lines 12-19. However, there is no disclosure or suggestion found anywhere in Quantrille et al. that the elastic fabric disclosed by Quantrille et al. is constructed and arranged for absorbing body fluids as recited in claim 1. Rather, the fabric may be (and is more likely) constructed for use as an outer cover material, or as liner material.

For these reasons, claim 1 is submitted to be unanticipated by and patentable over Quantrille et al.

Brooks et al.

Brooks et al., with reference to Figs. 1 and 2 thereof, disclose a reinforced nonwoven fabric 10 comprising outer layers 12, 18 of fibrous material, and a plastic netting 14 disposed between the outer layers. The netting 14 includes rods 15, which extend in one direction, and rods 15a, which intersect the previously noted rods 15 to define rectangular openings 17. The Office's position, as set forth in paragraph 25, page 7 of the Office action, is that "Sample 3 uses a 6x4 weave (MDxCD) fabric (page 25)." Applicants note that Brooks et al. more

specifically disclose that Sample 3 comprised a bonded nonwoven fabric with a 6x4 weave leno reinforcement netting.

Brooks et al. suffer from the same lack of disclosure as Mesek et al. (discussed above). That is Brooks et al. fail to explicitly or inherently disclose that the orientation of the 6x4 netting on the fabric is such that the MD strands of the netting extend in the MD direction of the fabric and the CD strands of the netting extend in the CD direction of the fabric. Rather, this orientation is impermissibly assumed in the Office action.

To establish inherency, the prior art "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999); MPEP §2112. In addition to the orientation presumed by the Office action, it is equally possible that the MD strands of the netting were oriented in the CD of the fabric and the CD strands of the netting were oriented in the MD of the fabric. In such a configuration, any stiffness differential caused by the difference in strand frequency would result in the MD of the fabric having a reduced stiffness instead of the CD as recited in claim 1.

For these reasons, claim 1 is submitted to be unanticipated by and patentable over Brooks et al.

Melius et al.

Melius et al. is directed to an absorbent structure having an absorbent core adapted to provide one or more passages for facilitating the flow of air through the absorbent core to ventilate the skin of the wearer. As shown in Fig. 1, a diaper 10 includes a backsheet layer 30, a liquid permeable topsheet layer 28, and an absorbent structure 32 located between the backsheet layer and topsheet layer. The absorbent structure 32 has an absorbent core 33 with a front section 33A and a back section 33B unconnected to each other, and separated by a gap 35. A layer of scrim 40 interconnects the front and back sections 33A, 33B and is located generally in the middle of the absorbent core 33 for reinforcing the fibrous absorbent core to enhance the integrity of the core. The scrim 40 comprises elongate strands arranged in a grid including parallel strands extending in the longitudinal direction 24 and strands extending in the lateral direction 26 defining rectangular openings 82 in the scrim. The scrim strands in the machine-direction 24 and cross-direction 26 can be of different materials.

The Office's position, as best understood from paragraph 28, page 9 of the Office action, is that since the scrim of Melius et al. can have machine-direction strands made from a material different from the cross-direction strands then the stiffness of the scrim in cross-machine direction is inherently reduced relative to the machine direction stiffness.

This position is incorrect for two reasons. First, that the machine direction strands and cross-direction strands are constructed of different materials does not necessarily result

in one direction having a different stiffness from the other direction. It is possible that the disclosed scrim has the same stiffness in both directions even though the machine direction strands are of a different material than the cross machine direction strands. For example, the size, basis weight, density, cross-section profile, etc. of the strands may also be different and result in the machine direction stiffness being equal to the cross direction stiffness.

Second, even if the different materials result in a stiffness differential, there is no disclosure or suggestion made by Melius et al. that the stiffer material is used to construct the machine direction strands. That is, Melius et al. disclose only that the machine direction strands and cross direction strands may be of different materials. While such a material difference may result in the machine direction stiffness being greater than the cross direction stiffness, it is equally possible that the cross direction stiffness is greater than the machine direction stiffness. Thus, it is not necessarily the case that the scrim of Melius et al. results in an absorbent core having a reduced CD stiffness relative to its MD stiffness.

For these reasons, claim 1 is submitted to be unanticipated by and patentable over Melius et al.

Claims 2-30 depend directly or indirectly from claim 1 and are submitted to be patentable over the cited references for the same reasons as claim 1.

II. Rejection of Claims under 35 USC §103.

Claim 3

Claim 3 depends from claim 2 and further recites that the reduced frequency of CD strands to the frequency of MD strands is in a ratio of about 0.9 (CD) to 1.0 (MD).

Claim 3 is submitted to be nonobvious and patentable over the references of record, and in particular Cederblad et al. in view of PCT published application WO 00/37000 (Ohnishi et al.), in that one of ordinary skill in the art would not be motivated to combine Cederblad et al. with Ohnishi et al.

As shown in Fig. 4, Ohnishi et al. disclose a flattened elastic composite member 600 having an elastomeric scrim 560. The scrim includes first strands 125 extending in structural direction B, and second strands 127 extending in structural direction D. The composite member 600 is flattened by applying a predetermined pressure and temperature to reduce the surface roughness (SRO) of the composite. Thus, Ohnishi et al. teach that both the first and second strands are flattened to reduce the SRO.

On the other hand, Cederblad et al., as mentioned above, teach that transverse strands 40 have a low melting point such that they melt away when heat and pressure are applied, and that the machine direction strands 38 have high melting points such that they are unaffected by the applied heat and pressure. As a result, merely flattening the strands of Cederblad et al. as taught by Ohnishi et al. would not result in the desired lamination of the strands 38 to the fabric as taught by Cederblad et al. In addition, the unaltered stands 38 of

Cederblad et al. would not have the desired reduced surface roughness taught by Ohnishi et al.

Accordingly, one of ordinary skill in the art would not be motivated to combine the teachings of Cederblad et al. and Ohnishi et al. to arrive at the claimed invention.

For these reasons, claim 3 is submitted to be nonobvious and patentable over the references of record. Claim 4 depends directly from claim 3 and is submitted to be patentable over the references of record for the same reasons as claim 3.

Claims 9-16, which are also rejected over Cederblad et al. in view of Ohnishi et al., are submitted to be patentable for substantially the same reasons as set forth above with respect to claim 3. That is one of ordinary skill in the art would not be motivated to combine Cederblad et al. with Ohnishi et al.

Claim 7

Claim 7, which depends from claim 2, recites that the second reduced frequency spacing of the CD strands is varied in different zones of the elongate MD strands to provide a variance in stiffness between such zones.

Claim 7 is submitted to be nonobvious and patentable over the references of record, and in particular Cederblad et al. in view of U.S. Patent No. 2,161,539 (Swartz), in that there is no motivation or suggestion to combine these references.

Swartz discloses a woven diaper 1 having sections 2, 3, 4, 6, 7 with different absorptive capacities. The absorptive capacities of sections 6, 7 are increased by using heavier warp

yarn, spacing the warp yarn closer together, or both. Column 2, lines 14-23.

The Office's position is that one of ordinary skill in the art would have been motivated to vary the frequency of the netting stands taught by Cederblad et al. in view of the warp yarn spacing taught by Swartz "by the desire to create areas of higher absorbency." However, the netting strands taught by Cederblad et al. are made from elastic resin and are not absorbent. Thus, one of ordinary skill in the art would not be motivated to add more nonabsorbent strands to increase absorbency.

For these reasons, claim 7 is submitted to be nonobvious and patentable over the references of record. Claim 8 depends directly from claim 7 and is submitted to be patentable over the references of record for the same reasons as claim 7.

Claim 17

Claim 17 depends from claim 1 and recites that the network of MD strands and CD strands is formed with at least some of the CD strands having weakened points along their lengths to enhance buckling.

Claim 17 is submitted to be further patentable over the references of record, and in particular Cederblad et al. in view of U.S. Patent No.5,622,581 (Ducker et al.), in that whether considered alone or in combination the references fail to disclose or suggest a network of MD strands and CD strands.

As mentioned above with respect to claim 1, Cederblad et al. disclose a composite having strands in only the cross

direction (see Fig. 4.). Thus, Cederblad et al. fail to teach or suggest a network of MD and CD strands.

Ducker et al. (Fig. 1) disclose a web of non-woven material 1 having elastic adhesive patches 2a, 2b, 2c for receiving elastic strands 3a, 3b. The elastic strands 3a, 3b can be deactivated at points on the web 1 where it is desired to reduce or eliminate the elastic tension in the finished training-pant product. Thus, Ducker et al. fail to disclose or suggest a network of MD and CD strands.

Since each of the cited references fail individually to disclose or suggest a network of MD and CD strands as recited in claim 17, a combination of the cited references would likewise fail to disclose or suggest this feature.

Accordingly, claim 17 is submitted to be nonobvious and patentable over the references of record. Claims 18-23 depend directly or indirectly from claim 17 and are submitted to be patentable over the references of record for at least the same reasons as claim 17.

IV. Conclusion

In view of the foregoing, favorable consideration and allowance of claims 1-30 is respectively requested.

Respectfully submitted,

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